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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,575	05/25/2007	Naoto Yumiki	069804-0143	9550

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EXAMINER	
SMITH, LINDA B	
ART UNIT	PAPER NUMBER
2862	
MAIL DATE	DELIVERY MODE
06/09/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,575	YUMIKI ET AL.	
	Examiner	Art Unit	
	LINDA B. SMITH	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/31/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Preliminary Amendment received on 7/31/06 has been entered into record. Claims 1-11 have been cancelled. Claims 12-24 have been added.

2. Claims 12-24 are presented for examination.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14 and 15 recites the limitation "changing means and changing parts" on page 11 of claims listing. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

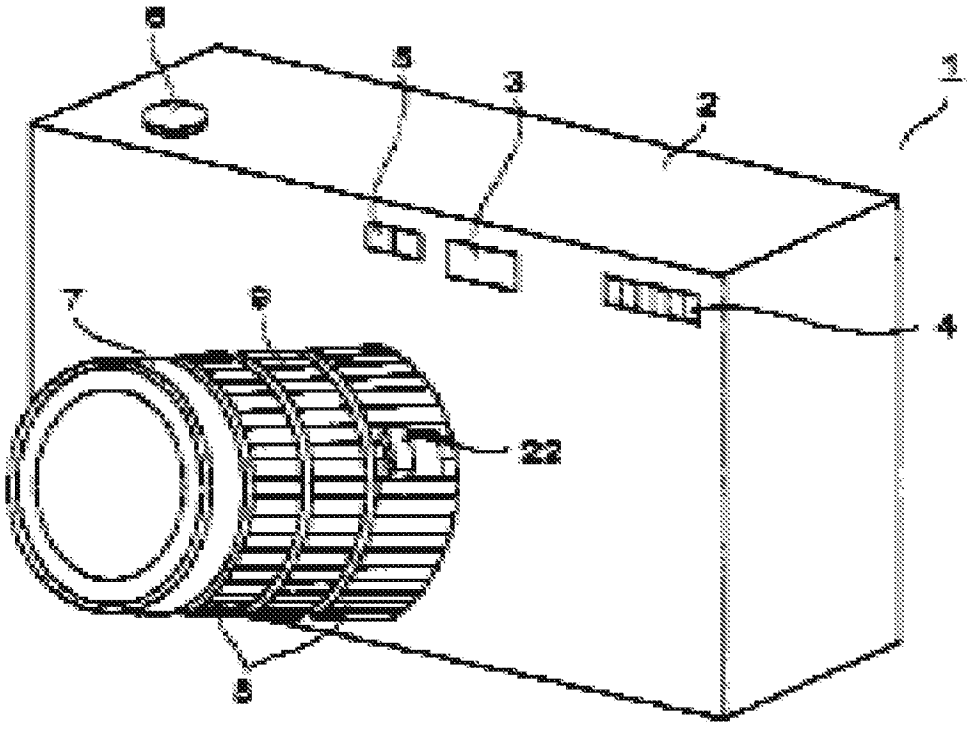
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 12 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi et al. (JP 2003-185905 A and hereinafter Hayashi).

8. As to claim 12, Hayashi discloses a lens barrel used for an imaging device capable of converting an optical image of an object into an electrical image signal, the lens barrel comprising: an imaging optical system for forming the optical image of the object (**0015 and Figs. 1,2**); a focus lens unit (**13**) which is included in the imaging optical system and capable of changing an object distance by moving in a direction parallel to an optical axis of the imaging optical system (**0018-0019**); moving means (**20,20a**) for moving the focus lens unit in the direction parallel to the optical axis (**0019**); driving means (**20**) for driving the moving means (**0019**); a first operating member (**9**) which is of a cylindrical shape coaxial to the optical axis of the imaging optical system and manually operated in a rotational manner in order to drive the driving means to thereby move the focus lens unit by the moving means (**0016,0020**); and a second operating member (**22**) which is integrally provided in the first operating member, and operated in order to switch between a state of allowing a manual rotating operation of the first

operating member and a state of preventing the manual rotating operation (**0020 and Fig. 4**).

【図４】



9. As to claim 16, Hayashi discloses an imaging device capable of converting an optical image of an object into an electrical image signal, the imaging device comprising: the lens barrel according to claim 12 including the imaging optical system for forming the optical image of the object (**0013**); an image sensor for converting the optical image formed by the imaging optical system into the electrical image signal (**0013-0014**); and control means (**CPU34**)(**0021-0022**), wherein the lens barrel further includes angle of rotation detecting means (**32**) for outputting a signal in accordance with an angle of rotation of the first operating member (**9**)(**0020**), and wherein when the first operating member is rotationally operated in a state where a rotating

operation of the first operating member is allowed by an operation of the second operating member (**22**)(**0020,0022-0023**), the control means (**CPU34**) generates said control signal for moving the focus lens unit based on the signal outputted by the angle of rotation detecting means (**0021-0022**).

10. As to claim 17, Hayashi discloses further comprising operation means (**5**) for calculating a defocus amount of the imaging optical system (**0014,0022,0025**), wherein when an operation start is instructed in a state where the rotating operation of the first operating member is prevented by the operation of the second operating member, the control means generates said control signal for moving the focus lens unit based on an operation result of the operation means (**0025, i.e. automated**).

11. As to claim 18, Hayashi discloses wherein the defocus amount of the operation means is calculated based on the image signal outputted by the image sensor (**0014**).

12. As to claim 19, Hayashi discloses wherein the imaging optical system is a zoom lens system (**0038,0040**), wherein the imaging device further comprises operation means (**5**) for calculating a defocus amount of the imaging optical system (**0022,0025**), wherein when the operation start is instructed in the state where the rotating operation of the first operating member is prevented by the operation of the second operating member, the control means generates the control signal for moving the focus lens unit based on the operation result of the operation means and a detection result of the focal length detection means (**0020-0022**).

13. Claims 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (US PG. Pub. No. 2004/0081442).

14. As to claim 13, Suzuki discloses a lens barrel used for an imaging device capable of converting an optical image of an object into an electrical image signal, the lens barrel comprising: an imaging optical system for forming the optical image of the object (**0033**); a focus lens unit (**L**) which is included in the imaging optical system and capable of changing an object distance by moving in a direction parallel to an optical axis of the imaging optical system (**0033**); moving parts (**7a,9a**) for moving the focus lens unit in the direction parallel to the optical axis (**0033,0046**); driving parts (**17**) for driving the moving parts (**0033,0046**); a first operating member (**17**) which is of a cylindrical shape coaxial to the optical axis of the imaging optical system and manually operated in a rotational manner in order to drive the driving parts to thereby move the focus lens unit by the moving parts (**0044,0046,0050**); and a second operating member (**41**) which is integrally provided in the first operating member, and operated in order to switch between a state of allowing a manual rotating operation of the first operating member and a state of preventing the manual rotating operation (**0044,0046,0050**).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

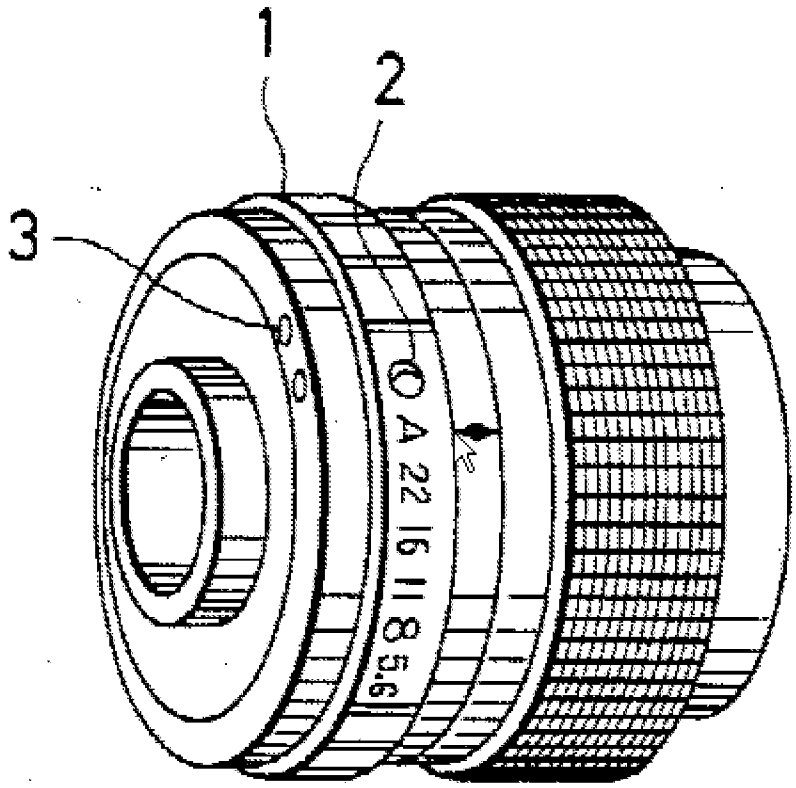
16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US Patent No. 4,629,305 and hereinafter Sato).

18. As to claim 14, Sato discloses all the features of the claimed invention a lens barrel used for an imaging device capable of converting an optical image of an object into an electrical image signal, the lens barrel comprising: an imaging optical system for forming the optical image of the object (**col. 2, lines 25-29**); driving means for operating the aperture stop (**col. 2, lines 30-40, item #1**); a first operating member which is of a cylindrical shape coaxial to the optical axis of the imaging optical system and manually operated in a rotational manner in order to drive the driving means to thereby change the aperture of the aperture stop by the changing means (**Fig. 1a and col. 2, lines 30-40**); and a second operating member (**2**) which is integrally provided in the first operating member, and operated in order to switch between a state of allowing a manual rotating operation of the first operating member and a state of preventing the manual rotating operation (**col. 2,lines 30-40 and Fig. 1a**). Sato is silent about an aperture stop which is provided in a specified position on the optical axis of the imaging optical system and capable of changing an aperture of the imaging optical system. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a camera or imaging device with an aperture stop since it is known and well-recognized in the art that an aperture stop is an

essential element to a camera or imaging device and Sato is configured to provide operations for an aperture.



19. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Niikawa et al. (US PG Pub. No. 2001/0043279 and hereinafter Niikawa) in view of Sato.

20. As to claim 15, Niikawa discloses a lens barrel used for an imaging device capable of converting an optical image of an object into an electrical image signal, the lens barrel comprising: an imaging optical system for forming the optical image of the object (**abstract and Fig. 1**); an aperture stop which is provided in a specified position on the optical axis of the imaging optical system and capable of changing an aperture of the imaging optical system (**0060**); driving parts for operating the aperture stop (**0060, item #404**); a first operating member

(**43**) which is of a cylindrical shape coaxial to the optical axis of the imaging optical system and manually operated in a rotational manner in order to drive the driving parts to thereby change the aperture of the aperture stop by the changing parts (**0060**).

Niikawa does not expressly disclose:

a second operating member which is integrally provided in the first operating member, and operated in order to switch between a state of allowing a manual rotating operation of the first operating member and a state of preventing the manual rotating operation.

Sato disclose automatic exposure camera having:

a second operating member (**2**) which is integrally provided in the first operating member, and operated in order to switch between a state of allowing a manual rotating operation of the first operating member and a state of preventing the manual rotating operation (**col. 2, lines 30-40**).

It would have been obvious to one of ordinary skill in the art at the time of the inveniton to modify the first operating member of Niikawa with a locking pin of Sato to provide a means to enable/disable the aperture modes of the lens aperture ring as well as to enable/disable other functions of the camera such as when the lens aperture ring is set at the automatic aperture position, only the shutter-speed priority automatic exposure, aperture-priority automatic exposure or programmed automatic exposure can be selected by the combination of a mode switch and an up switch or down switch, and, when the lens aperture ring is set at the manual position, only the bulb mode, flash synchronization mode, manual exposure mode or aperture-priority automatic exposure mode can be selected.

21. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Matsuo (US Patent No. 6,973,262).

Although the teaching of Hayashi shows substantial features of the claimed inveniton (discussed above), it fails to disclose:

focal length detection means for detecting a focal length of the imaging optical system.

Matsuo discloses a wide-angle field distance measuring camera having:

focal length detection means (**CPU 1**) for detecting a focal length of the imaging optical system (**col. 8, line 46-col. 9, line 9**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the system of Hayashi with a focal length detection means as disclosed by Matsuo to provide a means of knowing the positions of the zoom lens system in order to determine the correct angle of view as well as the size of image.

22. Claims 20,21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Hayashi as applied to claim 14 above, and further in view of Yamamoto et al (US Patent No. 5,621,495 and hereinafter Yamamoto).

Although the teaching of Sato shows substantial features of the claimed invention (discussed above), it fails to disclose:

an imaging device capable of converting an optical image of an object into an electrical image signal, the imaging device comprising: the lens barrel including the imaging optical system for forming the optical image of the object; an image sensor for converting the optical image formed by the imaging optical system into the electrical image signal; and a control means, wherein the lens barrel further includes angle of rotation detecting means for outputting a

signal in accordance with an angle of rotation of the first operating member, and wherein when the first operating member is rotationally operated in a state where a rotating operation of the first operating member is allowed by an operation of the second operating member, the control means generates the control signal for changing an aperture of the aperture stop based on the signal outputted by the angle of rotation detecting means [claim 20].

further comprising a photometry means for detecting a quantity of light, and an operation means for calculating an aperture of the imaging optical system based on a detection result of the photometry means, wherein when the operation start is instructed in a state where the rotating operation of the first operating member is prevented by the operation of the second operating member, the control means generates the control signal for changing the aperture of the aperture stop based on an operation result of the operation means [claim 21].

further comprising photometry means for measuring a quantity of light, shutter speed setting means for setting a shutter speed, and operation means for calculating the aperture of the imaging optical system based on the detection result of the photometry means and a setting of the shutter speed setting means, wherein when the operation start is instructed in the state where the rotating operation of the first operating member is prevented by the operation of the second operating member, the control means generates the control signal for changing the aperture of the aperture stop based on the operation result of the operation means [claim 23].

Hayashi discloses a camera having:

the lens barrel including the imaging optical system for forming the optical image of the object (**0013**) to provide a means to focus the incoming light to an image sensor; an image sensor for converting the optical image formed by the imaging optical system into the electrical image

signal (**0013-0014** to provide a means to convert the light signals into image signal for the camera; and a control means (**0021-0022**) to provide a means to control the camera functions, wherein the lens barrel further includes angle of rotation detecting means for outputting a signal in accordance with an angle of rotation of the first operating member (**0020**) [claim 20].
It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the system of Sato with an angle of rotation detecting means as disclosed by Hayashi to provide means to know the location of the first operating member (**9**) in order to know the focus location of the focus lens unit that location is communicated to the camera's controller.

Yamamoto discloses a representation of the depth of field in camera having:

wherein when the first operating member is rotationally operated in a state where a rotating operation of the first operating member is allowed by an operation of the second operating member, the control means (**CPU**) generates the control signal for changing an aperture of the aperture stop based on the signal outputted by the angle of rotation detecting means [claim 20] (**col. 10, line 45-col. 11, line 8**) to provide a control means that communicates with signal positions of the first and second operating members based upon whether the first operating member is enabled or disabled to manually change the aperture value.

further comprising a photometry means (**24**) for detecting a quantity of light [claims 21,23](**col. 10, lines 61-63 and Fig. 3**) to detect the amount light reflected from the object being photographed, and

an operation means (**CPU**) for calculating an aperture of the imaging optical system based on a detection result of the photometry means (**col. 10, line 45-col. 11, line 2**) to provide a

means of determining the control exposure based on the detected light from the object being photographed,

wherein when the operation start is instructed in a state where the rotating operation of the first operating member is prevented by the operation of the second operating member, the control means generates the control signal for changing the aperture of the aperture stop based on an operation result of the operation means [claims 21,23] (**col. 10, lines 55-66**) to provide a control means that detects when to change the aperture/exposure value based on the disablement of the first operating member. It detects when a final operation for photometering has ended into to determine the correct exposure/aperture value for the camera to operate image capturing.

shutter speed setting means for setting a shutter speed (**col. 10, lines 58-63**) to provide a means to set the shutter speed after the photometering has taken place, and

operation means (**CPU**) for calculating the aperture of the imaging optical system based on the detection result of the photometry means and a setting of the shutter speed setting means [claim 23] (**col. 10, lines 45-66**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the system of Sato as modified by Hayashi with a operation means as disclosed by Yamamoto to provide a means to generate the correct exposure control for the camera during image capture based on more than one parameter setting thereby enhancing the image quality, to enhance the efficient operation of the camera and generate an accurate/sharper depth of field.

23. Claims 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Hayashi and Yamamoto as applied to claim 14 above, and further in view of Iwasaki (US Patent No. 5,771,411).

Although the combined teaching of Sato in view of Hayashi and Yamamoto shows substantial features of the claimed invention (discussed above), they fail to disclose:

wherein the photometry means is the image sensor [claim 22]. wherein the photometry means is the image sensor [claim 24].

Iwasaki discloses a photometry device having:

wherein the photometry means (**9**) is the image sensor [claim 22, 24](**abstract, col. 3, lines 21-28 and col. 4, lines 12-16**).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the system of Sato as modified by Hayashi and Yamamoto, with a photometric image sensor as disclosed by Iwasaki to provide a means to set an optimum/maximum accumulation time for photometering regardless of the dynamic range. It will also combine the functions of two well-known camera components into one thereby being able to reduce the size of the camera as well as the cost of manufacturing.

Prior Art Made of Record

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Goldberg (US Patent No. 4,168,116) discloses camera for optimizing the location of the image surface.

b. Honma et al. (US Patent NO. 5,051,767) discloses a distance measuring device.

c. Sugiura et al. (US Patent No. 4,633,072) disclose focus apparatus for zoom lens system with distance detection.

d. Satoh (US Patent No. 6,700,615) discloses autofocus apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDA B. SMITH whose telephone number is (571)270-3827. The examiner can normally be reached on Monday through Friday 9:00AM-6:30PM EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Linda B Smith/
Examiner, Art Unit 2862

/Patrick J Assouad/
Supervisory Patent Examiner, Art Unit 2862